Table S1. List of acute and chronic nitrate (as sodium nitrate) and chloride (as sodium chloride) toxicity tests conducted with *Ceriodaphnia dubia*, and *Hyalella azteca*. S = survival; G = growth; R = reproduction; n = # times test was conducted. Test water listed was used as both diluent and control.

Acute tests[a,b]					
Species	Duration (d)	Endpoints	Test Water	Treatments	n
C. dubia	2	S	[Cl] =5	[N-NO_3] = 0 to 1129	5
C. dubia	2	S	[Cl] =10	[N-NO_3] = 0 to 1129	3
C. dubia	2	S	[Cl] =25	[N-NO_3] = 0 to 1129	3
C. dubia	2	S	[Cl] =50	[N-NO_3] = 0 to 1129	3
C. dubia	2	S	[Cl] =75	[N-NO_3] = 0 to 1129	3
C. dubia	2	S	[Cl] =100	[N-NO_3] = 0 to 1129	4
C. dubia	2	S	[Cl] =200	[N-NO_3] = 0 to 1129	2
Chronic tests[c]					
Species	Duration (d)	Endpoints	Test Water	Treatments	n
C. dubia	7	S,R	[Cl] =10	[N-NO_3] = 0 to 400	1
C. dubia	7	S,R	[Cl] =25	[N-NO_3] = 0 to 400	1
C. dubia	7	S,R	[Cl] =50	[N-NO_3] = 0 to 400	1
C. dubia	7	S,R	[Cl] =100	[N-NO_3] = 0 to 400	1
H. azteca	42	S,R,G	[Cl] =10	[N-NO_3] = 0 to 200	1
H. azteca	42	S,R,G	[Cl] =25	[N-NO_3] = 0 to 200	1
H. azteca	42	S,R,G	[Cl] =100	[N-NO_3] = 0 to 200	1
H. azteca	42	S,R,G	culture water	[Cl] = 0 to 3000	1

[a] Acute test results for *H. azteca* reported in Soucek et al. (2015)

[b] An acute test consisted of six treatments (including a control), with four replicate beakers per treatment

[c] A chronic test consisted of six treatments (including a control) for both species, with 10 replicate beakers per treatment for *C. dubia* and five replicate beakers per treatment for *H. azteca.*

Table S2. Test conditions for acute toxicity tests with *Ceriodaphnia dubia.*

1. Temperature (˚C)	25 ± 1
2. Photoperiod (L:D)	16:8
3. Light intensity	~ 160 lux
4. Test chamber size	50 ml
5. Test solution volume	40 ml
6. Age of organisms	<24 h
7. Dilution waters (mg Cl/L)	various (see Table 1)
8. Substrate	none
9. # organisms per chamber	5
10. # chambers/treatment	4
11. Food	none
12. Aeration	none
13. Test type	static
14. Renewal frequency	none
15. Test duration	48 h
16. Control survival	≥ 90%
17. Endpoint	survival

Table S3. Test conditions for 7-d, chronic nitrate toxicity tests with *Ceriodaphnia dubia*.

1. Temperature (˚C)	25 ± 1
2. Photoperiod (L:D)	16:8
3. Light intensity	~160 lux
4. Test chamber size	50 ml
5. Test solution volume	30 ml
6. Age of organisms at start of test	<24 h
7. Dilution waters tested (mg Cl/L)	various (see Table 1)
8. Substrate	none
9. # organisms per chamber	1
10. # chambers/treatment	10
11. Food	0.5 ml YTC/*P. subcapitata* daily
12. Aeration	none
13. Test type	static, renewal
14. Renewal frequency	daily
15. Test duration	7-d or until 60% of controls have 3 broods
16. Endpoints	survival, # young/female

Table S4. Test conditions for 42-d chronic toxicity tests with *Hyalella azteca*

1. Temperature (˚C)	23 ± 1
2. Photoperiod (L:D)	16:8
3. Light intensity	~160 lux
4. Test chamber size	300 ml
5. Test solution volume	200 ml
6. Age of organisms at start of test	7 – 9 days
7. Dilution waters tested (mg Cl/L)	various (see Table 1)
8. Substrate	nitex screens
9. # organisms per chamber	10
10. # chambers/treatment	5
11. Food	Tetramin (<250 µm): Wk 1, 1.0 mg (dw) daily; Wk 2-3, 1.25 mg daily; Wk 4-6, 2.5 mg daily Mixed Diatom suspension: 1.0 mg (dw) daily
12. Aeration	none
13. Test type	static, renewal
14. Renewal frequency	MWF
15. Test duration	42 days
16. Endpoints	survival, growth (dw), # young/female, biomass

Table S5. Mean (± standard deviation) measured water quality parameters for acute and chronic toxicity tests with *Ceriodaphnia dubia* and *Hyalella azteca*. s.u. = standard units; meas. = measured toxicant concentration; nom. = nominal toxicant concentration; min. = minimum value; max. = maximum value. Means shown include all treatments for 23 *C. dubia* acute tests, 4 *C. dubia* chronic tests, 3 *H. azteca* nitrate chronic tests, and 1 *H. azteca* chloride chronic test.

Test type	temperature ºC	pH s.u.	D.O. mg/L	alkalinity mg/L	hardness mg/L	%meas./nom. (min. – max.)
C. dubia acutes ($N\text{-}NO_3$)	24.9 ± 0.3	8.1 ± 0.2	7.5 ± 0.3	82 ± 1	89 ± 2	102 (92 – 138)
C. dubia chronics ($N\text{-}NO_3$)	24.9 ± 0.3	8.2 ± 0.3	8.0 ± 0.5	81 ± 2	89 ± 2	101 (97 – 107)
H. azteca chronics ($N\text{-}NO_3$)	22.9 ± 0.3	7.8 ± 0.2	6.4 ± 1.0	84 ± 3	89 ± 3	97 (76 – 104)
H. azteca chronic (Cl)	22.9 ± 0.4	8.0 ± 0.2	6.8 ± 0.8	84 ± 4	94 ± 4	100 (92 – 106)

Table S6. Acute nitrate (as $NaNO_3$) toxicity data for *Ceriodaphnia dubia* tested at various concentrations of chloride. Values in parentheses after LC50s are 95% confidence intervals.

test water	measured $[Cl^-]$ (mg/L)	control survival (%)	measured 48-h LC50 (mg $N\text{-}NO_3$/L)	% measured $[N\text{-}NO_3]$/ nominal$[N\text{-}NO_3]$
[Cl] =5	4.4	100	487 (424 – 562)	98.5
[Cl] =5	4.7	100	685 (588 – 798)	103.1
[Cl] =5	4.8	100	399 (344 – 477)	99.9
[Cl] =5	5.2	90	416 (305 – 570)	103.8
[Cl] =5	5.8	100	716 (641 – 800)	99.6
[Cl] =10	9.4	100	780 (729 – 835)	100.6
[Cl] =10	9.4	100	614 (529 – 714)	102.8
[Cl] =10	9.5	100	615 (523 – 725)	102.6
[Cl] =25	23.7	100	799 (unreliable)	99.3
[Cl] =25	24.6	100	544 (469 – 632)	103.2
[Cl] =25	25.0	100	696 (615 – 788)	100.2
[Cl] =50	47.5	95	750 (681 – 827)	100.0
[Cl] =50	47.6	100	404 (unreliable)	101.7
[Cl] =50	47.7	100	417 (unreliable)	116.4
[Cl] =75	73.1	95	765 (691 – 847)	102.8
[Cl] =75	73.1	95	711 (619 – 816)	102.6
[Cl] =75	73.1	100	619 (521 – 736)	103.0
[Cl] =100	94.8	90	369 (336 – 406)	99.8
[Cl] =100	95.6	100	566 (487 – 659)	103.9
[Cl] =100	96.6	100	423 (396 – 453)	99.5
[Cl] =100	96.6	100	478 (418 – 547)	100.5
[Cl] =200	195.9	100	509 (440 – 589)	100.5
[Cl] =200	196.6	100	453 (397 – 521)	102.3
Species mean acute value			**558**	

Table S7. 7-d chronic nitrate (as sodium nitrate) toxicity data for *Ceriodaphnia dubia* in dilution waters with varying chloride concentrations. Within endpoint columns, means followed by different capital letters are significantly different ($p < 0.05$). nc = not calculated (due to insufficient effect); EC20 = 20% effect concentration; values in parentheses after EC20s are 95% confidence intervals; C.I. = confidence interval.

Cl = 10 mg/L		
$[N\text{-}NO_3^-]$[a] (mg/L)	survival (%)	# young per female
0.07 (control)	100	15.3 ± 5.1 A
26	100	13.9 ± 5.5 A
51	100	13.9 ± 4.6 A
102	100	12.7 ± 7.0 A
202	100	14.6 ± 5.3 A
405	90	0.7 ± 0.9 B
EC20	nc	263 (C.I. unreliable)
EC50	nc	306 (C.I. unreliable)

Cl = 25 mg/L		
$[N\text{-}NO_3^-]$[1] (mg/L)	survival (%)	# young per female
0.09 (control)	100	33.3 ± 5.0 A
25	100	32.3 ± 7.1 A
50	100	29.7 ± 8.1 A
101	100	24.0 ± 5.9 B
201	100	19.3 ± 7.1 B
374	100	2.7 ± 2.6 B
EC20	nc	91 (67 - 122)
EC50	nc	183 (153 – 220)

Cl = 50 mg/L		
$[N\text{-}NO_3^-]$[1] (mg/L)	survival (%)	# young per female
0.02 (control)	100	34.0 ± 3.7 A
26	100	36.9 ± 2.3 A
51	100	35.9 ± 2.8 A
101	100	22.8 ± 13.5 B
201	100	13.4 ± 11.3 B
395	100	4.2 ± 5.5 B
EC20	nc	80 (59 - 109)
EC50	nc	153 (126 – 186)

Cl = 100 mg/L		
$[N\text{-}NO_3^-]$[1] (mg/L)	survival (%)	# young per female
0.02 (control)	100	39.6 ± 2.3 A
25	100	41.7 ± 2.5 A
50	100	41.7 ± 2.5 A
100	100	38.5 ± 3.3 A
200	100	30.6 ± 6.6 B
399	100	8.7 ± 6.6 B
EC20	nc	177 (156 - 200)
EC50	nc	271 (250 – 294)

[a] Mean measured $N\text{-}NO_3^-$ concentrations are shown for all tests